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EXECUTIVE OFFICE FOR ADMINISTRATION AND FINANCE

Secretary's Special Initiative to  
Reform Construction Procurement and Management  
by Commonwealth Agencies

**Construction Reform Task Force**

**Interim Report**

Friday, January 30, 1998

GOVERNMENT DOCUMENTS  
COLLECTION

OCT 27 1999

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*"Massachusetts has the dubious distinction of having the most regulated public construction contracting process in the country. Massachusetts statutes override the normal rules of law governing private contracting in the area of public bidding and in many important aspects of the performance of public contracts, as well as the fiscal aspects of contracts with state instrumentalities and municipalities."*

James J. Meyers and Christopher L. Noble  
Construction Law 1995



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## CONSTRUCTION REFORM TASK FORCE MEMBERS

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### Task Force Chairs

**Charles D. Baker, Secretary, EOAF**

Rosemarie Day, Co-chair, EOAF  
Joseph McNealy, Co-chair, DEP

#### Administration and Finance (ANF)

Jennifer Frauson  
Antonia Jiménez  
Rachel Madden

#### Capital Planning and Operations (DCPO)

Lark Jurev Palermo  
Stephen Hines  
Michael Lambert  
Kelly Quinn Popejoy  
Michael Sullivan

#### Comptroller's Office (CTR/OSC)

William Kilmartin  
Jacqueline Sanson Kassis  
Elizabeth Kilcoyne  
Michael Weld

#### Environmental Affairs (EOEA)

George Crombie  
Justin DeShaw

#### Environmental Management (DEM)

John Black  
Ruth Teixeira

#### Fiscal Affairs Division (FAD)

Kristen Lepore  
Kurt Steinberg

#### Highway Department (MHD)

Michael McGrath  
Robert Minchello  
Stephen O'Donnell

#### Housing and Community Development (DHCD)

Jane Wallis Gumble  
Ray Frieden  
Thomas Simard

#### Information Technology Division (ITD)

Louis Gutierrez  
Alan King  
Corinne Steele

#### Legal Team

Pamela Bloomfield, IGO  
Shannon Cagnina, EOAF  
Christopher Connolly, DALA  
Edward Corcoran, MHD  
Barbara Hansberry, IGO  
Jenny Hedderman, CTR  
Susan Jeghelian, ODR  
George Karavetsos, EOAF  
Michael McDonald, MDC  
Lisa Price, IGO  
Mark Russell, EOEA  
Christopher Supple, EOAF  
James Sweeney, AGO  
Candy Tempesta, DHCD  
Robert Tierney, DALA  
Nicholas Vontzalides, DEM  
Janet Werkman, IGO  
Richard Zelinka, DCPO

#### Metropolitan District Commission (MDC)

Alan D. Jewett  
Michael Rock

#### Operational Services Division (OSD)

Kathleen Kennedy  
Gary Lambert

#### Transportation and Construction (EOTC)

Julian Regan  
Stephen Walsh



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Beacon, Skanska

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Massachusetts Alliance for Small  
Contractors

Charles Button, Director of Construction  
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Massachusetts

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Associated General Contractors of  
Massachusetts

John Pourbaix, Executive Director  
Construction Industries of Massachusetts

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Massachusetts Municipal Association

William Rizzo, President  
Rizzo Associates

Kevin Smith, Senior Vice President  
Fidelity Investments

Linda Snyder, Executive Director  
State College Building Authority

Daniel Tishman, President  
Tishman Construction Corporation

Guillermo Vicens, Vice President  
Camp Dresser & McKee Inc.

Michael Widmer, President  
Massachusetts Taxpayers Foundation







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## INTRODUCTION

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### **Background**

The administration of public sector construction contracts in Massachusetts is based on laws that originated over 50 years ago. Although the Ward Commission made key changes to some laws governing public building construction in the early 1980's, other laws remained the same. Furthermore, the administrative procedures dictated by these statutes have been reviewed and updated only sporadically over time. Meanwhile, many owners in both the private and public sector have adapted their methods to new technology and other developments in the construction industry.

Taxpayers increasingly expect government to "do more with less." This means securing the "best value" for taxpayers' dollars, encouraging innovation, and rewarding excellence. To meet these standards, we in state government must reexamine old assumptions, revise our internal processes, and break new ground.

### **The Construction Reform Task Force**

The Construction Reform Task Force convened on October 29, 1997 to review the Commonwealth's construction procurement and contract management practices. The task force has a six month mandate to examine both horizontal and vertical construction. Horizontal construction encompasses roads and bridges. Vertical construction consists of buildings.

To date, the task force has:

- Examined the volume of the Commonwealth's construction business. (p. 2)
- Studied current practices and explored opportunities for improvement. (p. 5)
- Defined a set of principles for design and construction processes. (p. 14)
- Diagrammed the processes of design and construction procurement and contract management. (p. 18)
- Met with several organizations outside of state government to identify best practices in construction processes. (p. 28)
- Convened a group of DCPO client agencies to identify their concerns. (p. 37)
- Created an advisory committee of industry professionals to get their opinion on improving the Commonwealth's construction practices. (p. 39)

This report marks the half-way point of the Task Force's work. During the remaining three months, the Task Force will select several key areas for improvement and will assess the feasibility for change. The group will then draft an action plan for reform.





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## IMPORTANT FACTS ABOUT PUBLIC CONSTRUCTION

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### Financial Data

- The Commonwealth **spent** over \$3 billion on construction projects in FY97, including spending by state agencies (\$2 billion) and authorities (\$1 billion).
- Of the spending in state agencies, \$1.7 billion is directly managed by the agency (agency holds a contract with the general contractor) and \$300 million is indirectly managed by the state agency (a local government holds the contract with the general contractor).
- The **source of funds** for state agency construction includes capital (state issued bonds), federal, operating, and other (trusts, etc.). Only state-bonded funds are subject to the Administration and Finance capital cap.
- There were 4,580 **active contracts** for construction in the Commonwealth in FY97, including contracts for studies, design, resident engineering, and general contracting. Of those, DCPO had 127 large contracts (> \$100,000) and MHD had 916 large contracts.
- 598 **change orders** were approved through the Governor's Council and paid by the Commonwealth in FY97. Change orders are used to authorize payments not accounted for in the original design and contract documents, such as:
  1. A change in planned usage that requires divergence from original design
  2. Errors, omissions or inconsistencies in design that are corrected by the contractor
  3. Unforeseen conditions materializing on site.
- The **cost of change orders** as a percentage of total cost on projects completed varies by type of project.

DCPO estimated the change order cost for FY95-97 to be:

New Construction	6-8%
Large Renovation	15-20%
Small Renovation	9-10%

MHD estimated the change order cost for FY97 to be approximately \$25 million, which represents 9% of total expenditures on construction during the same period.



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## **IMPORTANT FACTS ABOUT PUBLIC CONSTRUCTION, continued**

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### **Prequalification Statistics**

DCPO- There are currently over 2,000 contractors certified to do construction by DCPO. 22% of these are certified for general construction; the rest are certified for subtrades. During 1997 DCPO received over 1,000 applications for certification. Only 59 applicants (5%) were rejected.

MHD- There are currently over 600 contractors prequalified in 30 different categories of work with MHD. Of those contractors, 57% are prequalified in highway construction and 28% in bridge construction. During 1997 MHD received over 630 applications for prequalification. Of those, less than 2% were rejected.

### **Timeframes**

Construction projects vary greatly in size and complexity, which makes it difficult to quantify average project timeframes. However, a typical project of \$10 million takes approximately 4 years to complete. (See diagram on next page)





OVERVIEW: STUDY/DESIGN TO CONSTRUCTION



TIMELINE BASED ON A TYPICAL \$10 MILLION PROJECT

<u>DCPO</u>	12 Months	15 Months	24 Months
<u>MHD</u>	12 Months	18 Months	24 Months

Notes:

1. DCPO has a formal study requirement for most building projects and must use a different firm for the design.
2. Although it is not a main focus of this report, we do acknowledge the time and energy necessary to fulfill environmental regulatory and permitting requirements. The Massachusetts Environmental Policy Act (MEPA) process usually occurs simultaneously with the design phase.



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## WHY REFORM? What We Learned From Our Own Experience...

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The task force identified several typical scenarios that suggested the need for reform of the Commonwealth's construction practices.

### *Time is money...*

The Commonwealth must award projects to the lowest bidder, but the lowest bidder does not always deliver the lowest-cost project. Bridge rehabilitation has further reaching cost implications than the job's price tag. Disruption to businesses on both sides of the bridge results in lost revenue for those businesses and forfeited tax revenue for the state. Indirect costs mount over time in inconvenience to citizens and project overhead. Our linear construction process takes longer than other acceptable delivery methods and is ultimately more expensive for taxpayers.

### *Two is not always better than one...*

The renovation of Taunton State Hospital taught us a valuable lesson regarding the importance of communication between the user agency, DCPO, the study design firm, and the final design firm. After the renovation was completed, the Department of Mental Health discovered that doorways were too narrow for food carts and hospital gurneys. Had the study and design been performed by the same designer, such key information might not have been overlooked and the problem could have been avoided.

### *Forest for the trees...*

Our construction process operates within the confines of a number of detailed laws created to ensure equity and impartiality. Unfortunately, in over-standardizing procedures we have limited our use of discretion and common sense. The Division of Housing and Community Development has, on more than one occasion, been forced to throw out the lowest bid because the bid deposit was incorrectly addressed. The lowest bidder can be disqualified because a bid deposit check is made out to the town instead of the town's local housing authority. This is a minor oversight but which could be corrected easily, but rules are rules.





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## WHY REFORM?, continued

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***Your time is our time...***

Both design and construction contracts include completion schedules. However, the Commonwealth has little recourse if the designer or contractor falls behind. From a practical standpoint, it would take longer to remove the designer or contractor and start the process all over again than to just wait it out with the original firm.

***We never learn from their mistakes...***

It is not uncommon for a contractor with less than satisfactory performance on previous public construction jobs to be awarded future contracts. As long as the contractor has not received a substandard cumulative evaluation, the firm will receive contract awards for which it makes the lowest bid.

***Good enough...***

One agency hired a prequalified dealer with an adequate bond limit for a rather large job. Once on site, it became clear that the contractor did not have the experience necessary to perform the job. The contractor had fulfilled the requirements of the Commonwealth's prequalification process but lacked the requisite experience for such an extensive job. As a result, the agency spent an inordinate amount of time overseeing the project to ensure it was completed properly.

***The shortest distance is not always a straight line...***

Our linear procurement process prevents us from advancing to the next step in the process until the last is complete. When constructing a new building, we spend time and money hiring one design firm to prepare a detailed study and initial design, then hire another firm for the final design. We know exactly where the building is going to be built. The funding is in place. The design is almost finished. We should start clearing the site... right? Wrong. We cannot go to bid for the general contractor until the final design is 100% complete. Therefore, we rarely start any site work until months after the design is finalized.





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## WHY REFORM?, continued

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### ***Bridging the gap...***

During any given project, we hire multiple designers, contractors and subcontractors at different stages of the process. These companies may have very different ways of approaching a job and disagreements can arise. These disputes cause delays and inevitably cost the Commonwealth money. By employing a method which allows designers and contractors to work together earlier in the project, some of these disputes could be resolved before the first shovel hits the ground.

### ***What could be...***

MHD has had limited opportunities to employ other procurement methods, such as design/build. A design/build contract is most cost-effective on complex large scale projects with clearly defined limits and scope. Major bridge rehabilitation projects, for example, contain design elements that can be designed early and under construction while design of the superstructure and other bridge/roadway features are underway.

Ongoing coordination between design and construction eliminates the traditional antagonistic relationships between MHD personnel, the designer and the contractor. Design-build contracting provides the Commonwealth an opportunity to reduce design, construction and administration costs and most importantly reduce the amount of time to complete vital highway projects.

### ***When given the chance...***

Special legislation has allowed DCPO to use a "two step" quality and price-based procurement process for modular construction. Other project-specific bills have enabled alternative delivery methods such as design/build. We have demonstrated that when we break free from our linear construction process, we can do more in less time and for less money.



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## **WHY REFORM?, continued**

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Some past successes include:

### **Modular Construction**

- The Medical Examiner's Building
- Massachusetts Correctional Institute in Shirley

### **Special Legislation**

- Reggie Lewis Track Facility at Roxbury Community College
- Suffolk County Jail and House of Corrections

### **Design/Build**

- Massachusetts Information Technology Center.





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## SUMMARY OF INITIAL OBSERVATIONS: Today

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After reviewing the Commonwealth's construction processes and seeking input from customers and industry professionals, the Construction Reform Task Force has summarized its initial observations of the Commonwealth's process as it stands today, and its vision for how things should be tomorrow.

### TODAY

#### Lack of Flexibility to Use Alternative Methods

- The Commonwealth is mandated to use the same procurement process, regardless of whether the construction project is a \$100,000 renovation, or a \$100 million new facility. This **"one-size fits all process"** does not allow a common sense approach based upon the complexity or scope of a construction project and can result in delays and inefficient use of resources.
- Industry standards in the construction arena have evolved and developed numerous **alternative delivery methods** that the Commonwealth is prohibited from using. The Commonwealth uses conventional delivery methods that make it more difficult to build trust among the owner, designer, general contractor, and subcontractors.
- Due to **stringent statutory constraints** on construction procurement and delivery, the Commonwealth has to seek special legislation to exempt certain projects from these statutes.

#### Price Before Excellence

- There is currently no way to incorporate excellent **past performance** into bid selection criteria. This is a missed opportunity because the Commonwealth collects a lot of information about contractor performance during the certification process.
- The Commonwealth is mandated to award projects to the contractor who submits the **lowest bid**, regardless of whether the contractor represents the best qualified contractor for the project.
- In the low bid environment, each bidder has the incentive to find errors, omissions, and inconsistencies in the design documents which can result in **excessive change orders** after the contract is awarded.
- Some awarding authorities are reluctant to take **tough stands** with contractors because they don't want to expend the resources litigating.



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## SUMMARY OF INITIAL OBSERVATIONS: Today, continued

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- The Commonwealth **rarely provides incentives** for a contractor to excel (e.g. deliver the project early, or provide significant expertise or performance). Because all future work is mandated to be awarded to the low bidder, without consideration of past performance excellence, contractors have no incentive to bring projects in early or to provide the management expertise required to exceed the minimum contract requirements for a project.

### Losing Time

- In vertical construction, the mandated **two-step study/design** process which requires the use of two different architects delays the process significantly and adds little value. It also increases the likelihood of communication gaps between user agencies, DCPO, and the two designers. Gaps in this initial phase can translate into significant problems in the actual construction phase which require design revisions, construction delays, and other additional costs.
- Agencies don't have the right **incentives** to finish projects early. Project financial planning doesn't take into account the cost of borrowing money and the time elements of the state process from start to finish. Project payments aren't structured to encourage early completion.

### Customer Orientation

- A review of the similarities and differences between horizontal and vertical construction reveals that both types of construction follow very **similar administrative procedures** and can benefit from each others' experiences. The construction industry would benefit from agencies making their procedures more consistent.
- **Technology** isn't used to full advantage in providing construction information (e.g. contractor certification, bid tracking or advertising all documents) inside and outside of state government. Much of the information collected by departments performing construction is not automated in such a way that it can be shared.
- The Commonwealth **inadequately informs** its agencies and vendors about how to do construction business with the state.
- **Accountability** for project management over the life of the project is spread out.





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## **SUMMARY OF INITIAL OBSERVATIONS: Tomorrow**

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As mentioned above, the Construction Reform Task Force has developed a vision of how construction processes should look in the future.

### **TOMORROW**

#### **Flexibility to Use Alternative Methods**

- The Commonwealth will create the flexibility to match the construction delivery method with the scope and complexity of the construction project.

#### **Saving Time and Achieving Excellence**

- Procurement will include open competition but selection will be based on getting the best quality and delivery schedule for a reasonable price. Excellent prior performance will be valued. Contracts may include incentives for early completion. The Commonwealth will have a more efficient procurement system for small or routine projects.
- The system will encourage innovation and incorporate strategies to keep up with industry changes and technology advances. Commonwealth construction professionals will continue to share information about best practices.
- Commonwealth construction agencies will incorporate a team approach that involves state agencies, designers, and contractors jointly in the construction process. This will reduce the necessity for change orders.

#### **Customer Service**

- Customer service will be emphasized. The Commonwealth will present a “single face of government” for both horizontal and vertical construction. The Commonwealth will make information about construction processes consistent and will provide it in a user-friendly, technologically-efficient manner. Agencies will be given the tools to manage more of their own small or routine construction projects.



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## NEXT STEPS & POTENTIAL FOCUS AREAS

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### NEXT STEPS

During the next three months, the Construction Reform Task Force will select some of the areas listed below and will assess the feasibility for change. The group will then draft its action plan for reform. Some of the reforms will be administrative in nature; others will require statutory changes.

### POTENTIAL FOCUS AREAS

#### Flexibility to Use Alternative Methods

- Review **alternative methods** of construction procurement and delivery. For example:
  - Explore use of short-lists of qualified vendors for larger projects
  - Examine partnering opportunities
  - Review alternative delivery methods and categorize when they are applicable (e.g. by project size, complexity); draft legislation to implement
  - Review subcontractor issues with Advisory Board.

#### Saving Time and Achieving Excellence

- Enhance **quality**. For example:
  - Raise the minimum standards of the contractor qualification system for “responsible bidder,” especially for large projects
- Strengthen the **evaluation** system. For example:
  - Conduct interim evaluations, giving contractor a chance to improve
- Make better use of the **design** process. For example:
  - Review two-step (using different design firms for study vs. design) process.

#### Customer Service

- Simplify the **payment** process. For example:
  - Shorten time from field approval to central processing
- Improve the project **close-out** process. For example:
  - Establish punch list completion incentives
- Use **new technology** wherever possible. For example:
  - Apply tools to share prequalification information





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## NEXT STEPS & POTENTIAL FOCUS AREAS

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- Increase **delegation** of construction management to client agencies. For example:
  - Update delegation thresholds; providing flexible terms
  - Train for consistency, quality
- Improve **contract documents**. For example:
  - Consider standardizing contract language that doesn't change and do a central filing (like Commonwealth Terms & Conditions) to cut down on pages per contract
  - Put contract documents on the Internet.





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## PRINCIPLES OF DESIGN AND CONSTRUCTION

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As the task force begins issuing recommendations and implementing reforms, these principles will serve as a framework:

**“The overall goal of the design and construction process is the fair, open, timely and cost effective development and management of high quality Commonwealth assets that meet the current and future needs of the public.”**

A successful design & construction process takes into consideration:

Being **Fair & Open** by providing the same information and opportunity to all bidders; encouraging the continued participation of high quality bidders including minority and women-owned businesses; fostering new creative business partnerships and relationships between departments and bidders; and supporting competition among bidders to provide the most competitive costs, designs, services and construction implementation.

Being **Timely** by ensuring the completion date satisfies the identified need and meets generally accepted business and technical standards, with proper consideration to available resources and the public interest; by minimizing delays (i.e. reducing paperwork, managing projects properly, scoping the administrative processes to fit the size and complexity of the project) thereby ensuring prompt payment and adherence to project schedule; and by adapting to a variety of circumstances (i.e. public safety, environmental) as the need arises.

Being **Cost Effective** by obtaining the best economic value with the available resources, incorporating value engineering and considering the life cycle of the asset (including its maintenance)

Creating **High Quality** assets that effectively and efficiently serve the needs of their users; are durable, safe, accessible, environmentally sound, and easily maintained; and are aesthetically compatible with their surrounding community. (Assets are public infrastructure including buildings, roads, and environmental improvements as well as undeveloped land. They are physical and long-term.)

Meeting **Current & Future** needs of the public by planning & incorporating into the design process agency missions, resource availability, and technology solutions. This includes maintaining a focus on future trends, encouraging the use of innovative methods and cooperation between agencies to exchange information and best practices.



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## APPENDIX

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## APPENDIX

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### Construction Laws: Background

There are two primary laws that govern the procurement of public construction contracts in the Commonwealth:

1. Horizontal Construction: Chapter 30

Chapter 30 was incorporated in its current form in the early 1950s. It established the principle of awarding construction contracts to the lowest bidder. It made some provisions for awarding authorities to seek qualified bidders. Its fundamental premise is the traditional “design-bid-build” model, where an awarding authority designs or selects a designer to prepare detailed specifications, bids the project to a separate general contractor, and awards the contract based on lowest price.

2. Vertical Construction: Chapter 149

Chapter 149 was established in 1939 and covers the bidding of public building projects. It mandates that building projects be awarded to the “lowest responsible and eligible bidder” and makes provisions for prequalifying bidders. Chapter 149 has a similar “design-bid-build” premise to Chapter 30, but also includes the filed sub-bid provisions which requires public agencies to award contracts to certain subcontractors in advance of making the award to the general contractor. Chapter 30 contains no such provisions.

### Other Statutes

**Chapter 29 Section 7 (k)** governs the study of vertical construction projects. **Chapter 7** governs the rest of the vertical construction world and covers the organization and jurisdiction of the Division of Capital Planning and Operations and the awarding of design contracts. **Chapter 7** also mandates that the study and design for a project be done by two separate firms.

Finally, **Chapter 29 Section 8(b)** governs prequalification for horizontal construction contractors.

On the following page is a chart summarizing the key thresholds to which the public construction laws apply. Exceptions are also noted.





**The Commonwealth's Public Construction Laws  
Summary of Applicable Thresholds**

<b>Estimated Construction Cost:</b>		<b>Applicable Statute:</b>	<b>Special Considerations:</b>	
			<b>Thresholds</b>	<b>Explanation</b>
<b>Vertical:</b>	> \$25,000	Ch. 149	If design fee is ≤ \$100,000 (repairs only)	⇐ Prohibition on use of same designer for study and design is waived
	\$10,000 - 25,000	Ch. 30 Sec. 39(m)	\$100,000 - 200,000	⇐ Construction management can be delegated to user agency <sup>3</sup>
	< \$10,000	Small procurement <sup>2</sup>	< \$10,000 design fee or < \$100,000 estimated construction cost	⇐ Design proposals are not required to go before Designer Selection Board
<b>Horizontal:</b>	> \$10,000 - 49,999	Ch. 30 Sec. 39(m)		
	> \$50,000	Ch. 30 Sec 39(m) and 801 CMR 21.00 Ch. 29 Sec. 8(b) (Prequalification for Ch. 90 projects)	< \$500,000 design fee  > \$500,000 design fee	⇐ Designer selected by A&E Board from prequalified list  ⇐ Competitive quality based selection using RFR managed by A&E Board

- Notes:**
1. Statutes authorizing alternative delivery methods, such as modular construction, contain different thresholds.
  2. The thresholds for small procurement for construction projects is inconsistent with general state purchasing guidelines, which define small procurements as less than \$50,000.
  3. Chapter 88 of the Acts of 1997 authorized a \$500,000 delegation threshold for certain projects.

Secretary's Special Initiative to  
Reform Construction Procurement and Management by Commonwealth Agencies  
INTERIM REPORT



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## APPENDIX

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### Horizontal and Vertical Construction Processes

The task force diagrammed the lifecycle of Commonwealth assets, in relation to construction processes. The task force then summarized each agency's administrative activities related to construction procurement and management into a basic six-step process. These processes apply to horizontal and vertical construction for large and small projects.

The following pages contain diagrams for the procurement & delivery of:

1. Project Lifecycle
2. Design
3. Construction (Direct)<sup>1</sup>
4. Construction (Indirect)<sup>2</sup>

### Participating Agencies

Department of Environmental Management  
Department of Housing and Community Development  
Division of Capital Planning and Operations  
Massachusetts Highway Department  
Metropolitan District Commission

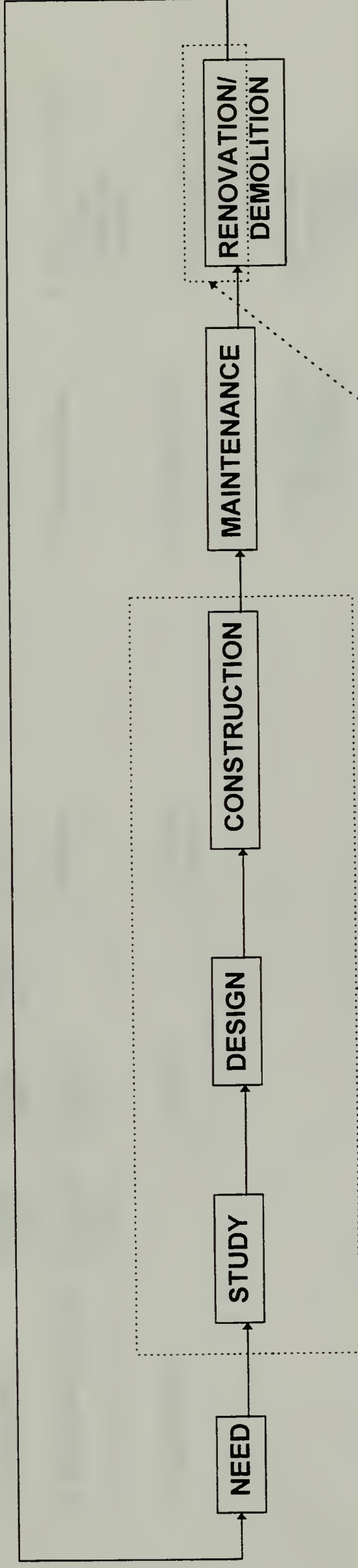
### Notes:

- <sup>1</sup> Direct construction refers to projects where the state agency holds the contract with the general contractor.
- <sup>2</sup> Indirect construction refers to projects where local government holds the contract with the general contractor and the state agency oversees the use of funds.





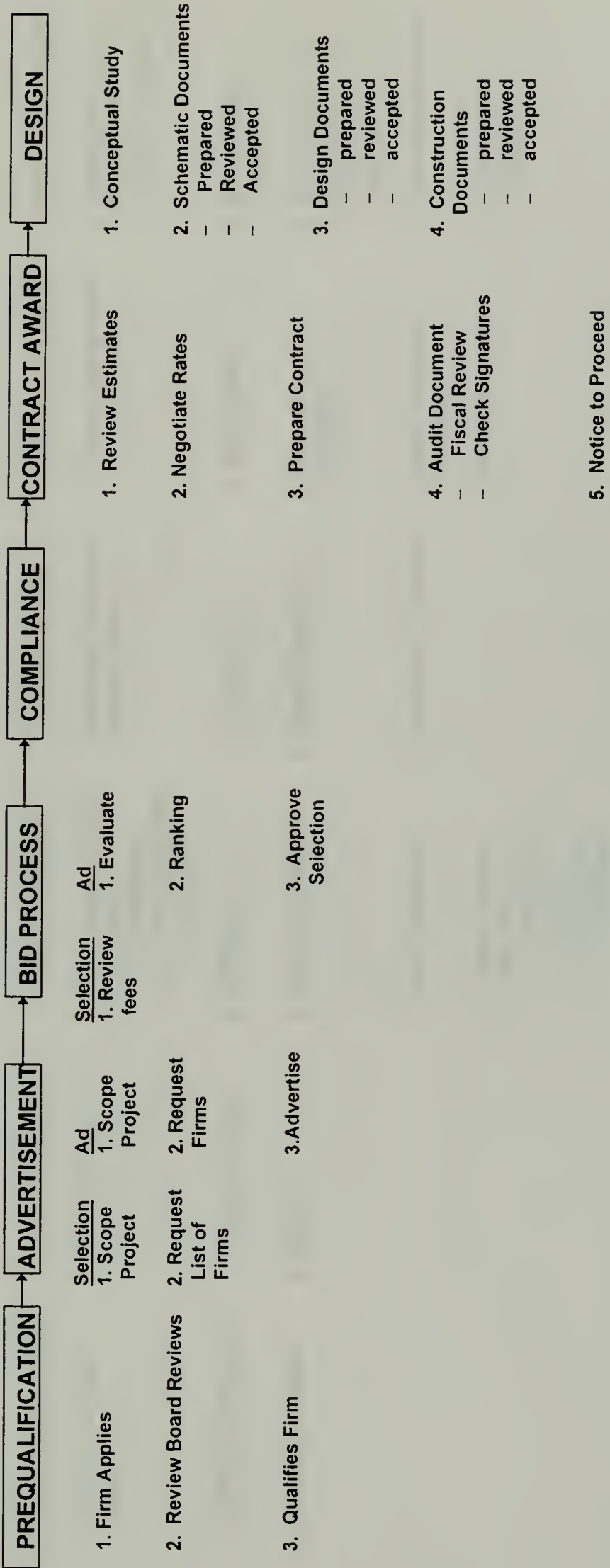
## OVERVIEW: TOTAL ASSET LIFE CYCLE



The Construction Reform Task Force is focusing on the processes within these phases of a capital asset's life. The task force recognizes, however, that the processes should be guided by the perspective of the asset's total life.

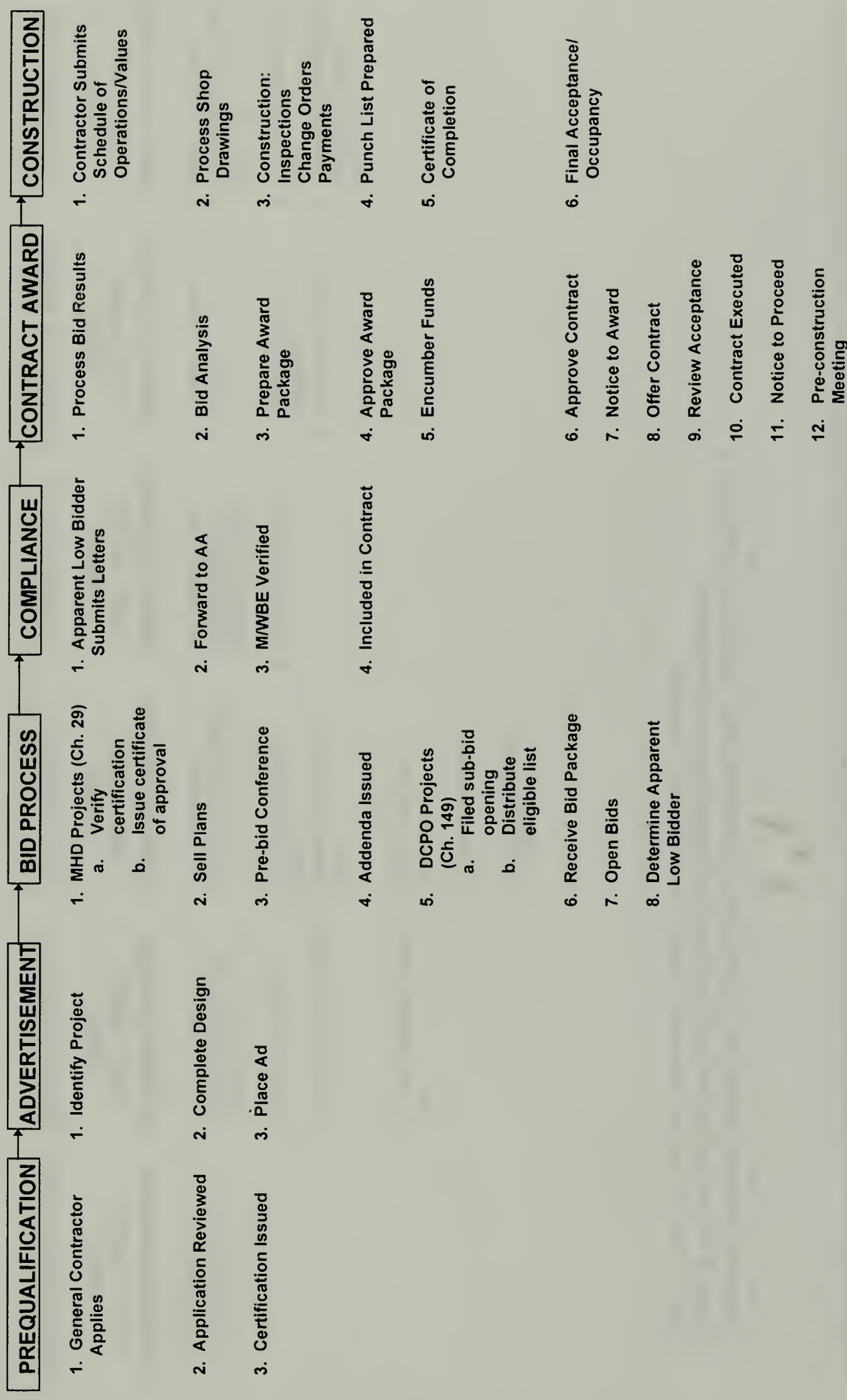


THE COMMONWEALTH'S DESIGN PROCESS





## THE COMMONWEALTH'S DIRECT CONSTRUCTION PROCESS

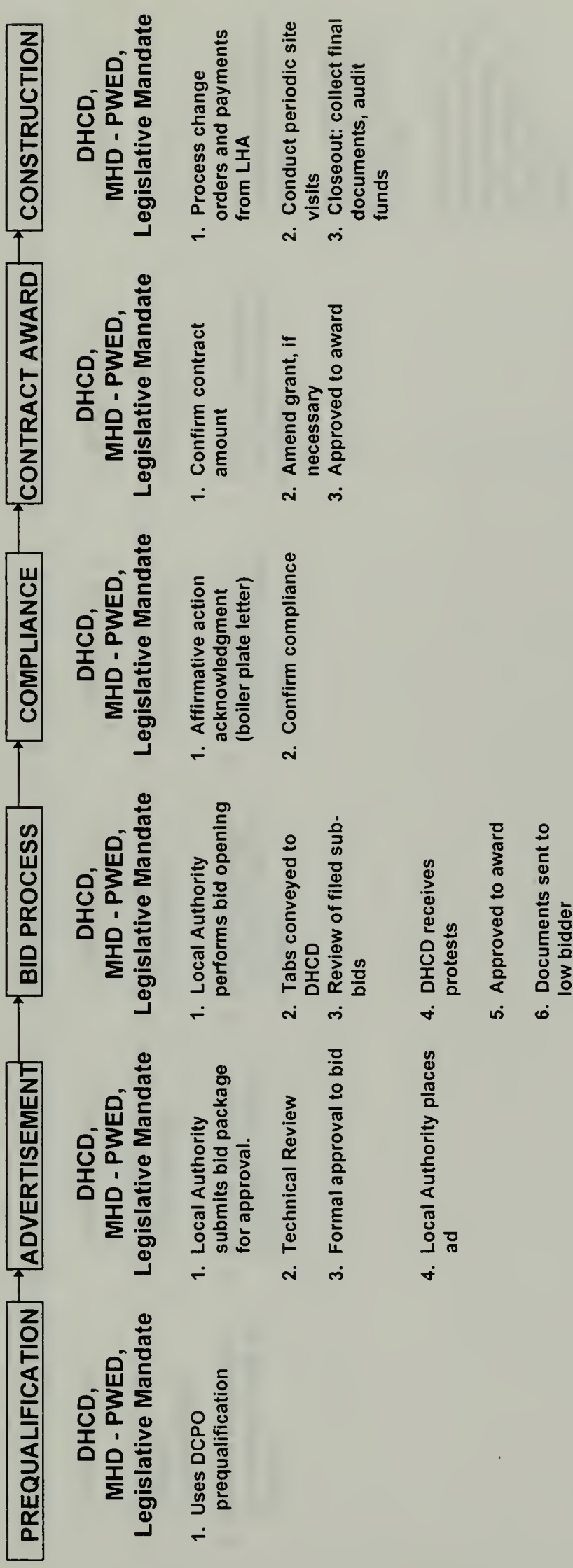


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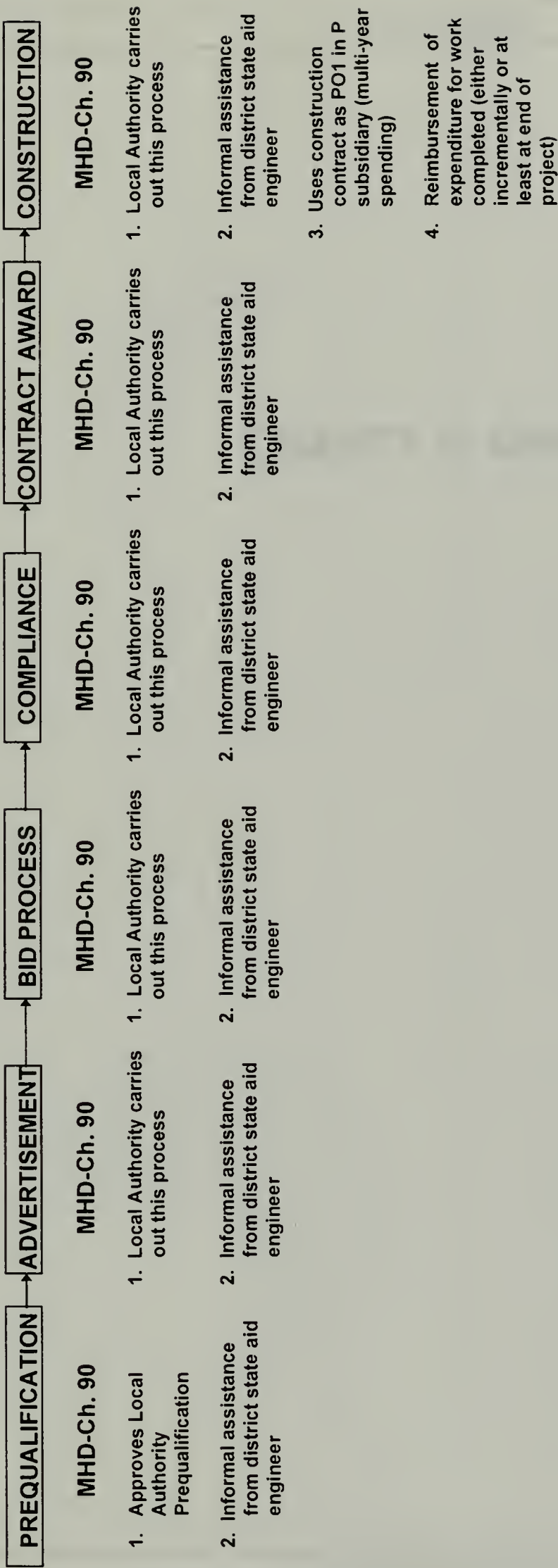
# THE COMMONWEALTH'S INDIRECT CONSTRUCTION PROCESS



DHCD indirect projects are funded as grants to Local Housing Authorities.  
 PWED grants are administered by EOTC for Public Works Economic Development.  
 Legislative mandated construction is MassHighway projects specifically designated by legislation.



COMMONWEALTH'S INDIRECT CONSTRUCTION PROCESS



Chapter 90 is a MassHighway administered grant program to municipalities.





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## **APPENDIX**

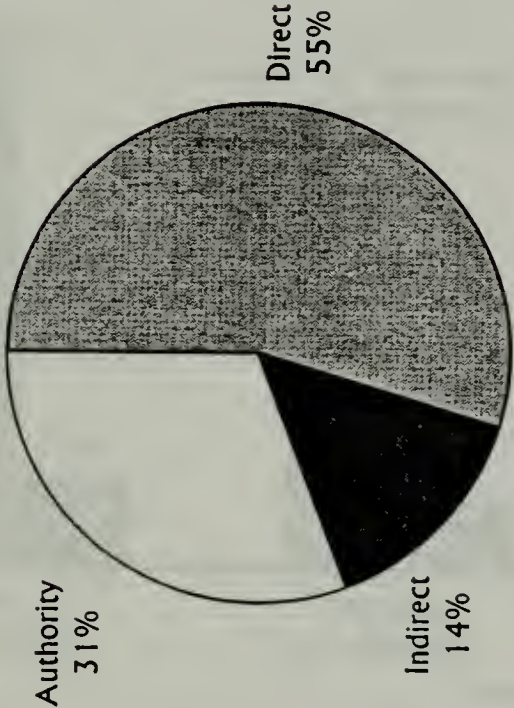
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### **CHARTS & GRAPHS**

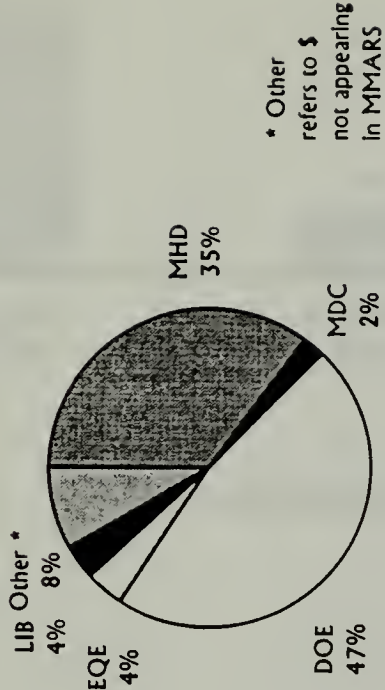


Summary Charts: Distribution of Commonwealth Construction Spending

\$3.4 Billion in FY97 Construction Spending

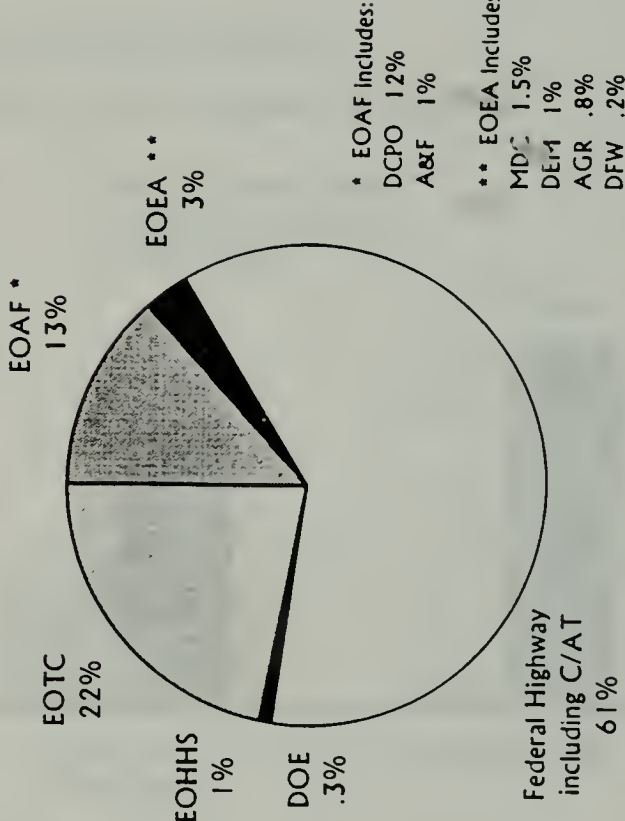


\$452 Million in FY97 Indirect Construction Spending



\* Other refers to \$ not appearing in MMARS

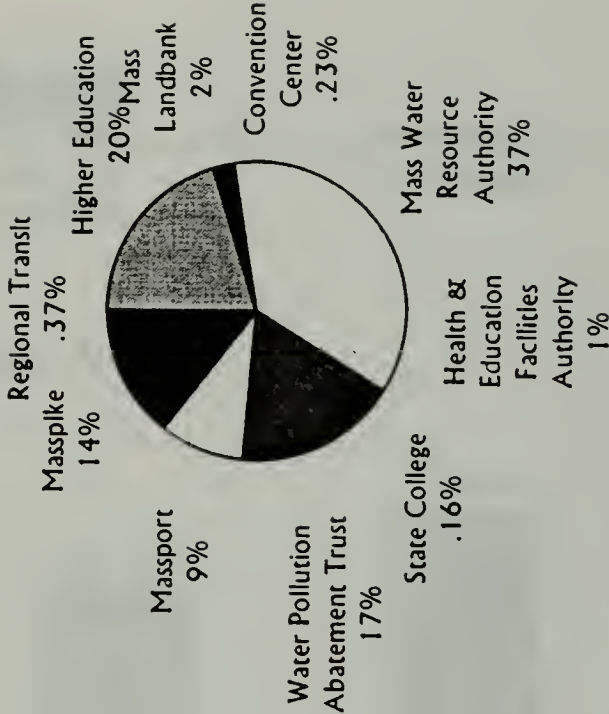
\$1.8 Billion in FY97 Direct Construction Spending



\* EOAF Includes:  
DCPO 12%  
A&F 1%

\*\* EOEA Includes:  
MDC 1.5%  
DEI 1%  
AGR .8%  
DFW .2%

\$1 Billion in FY97 Independent Agency Construction Spending



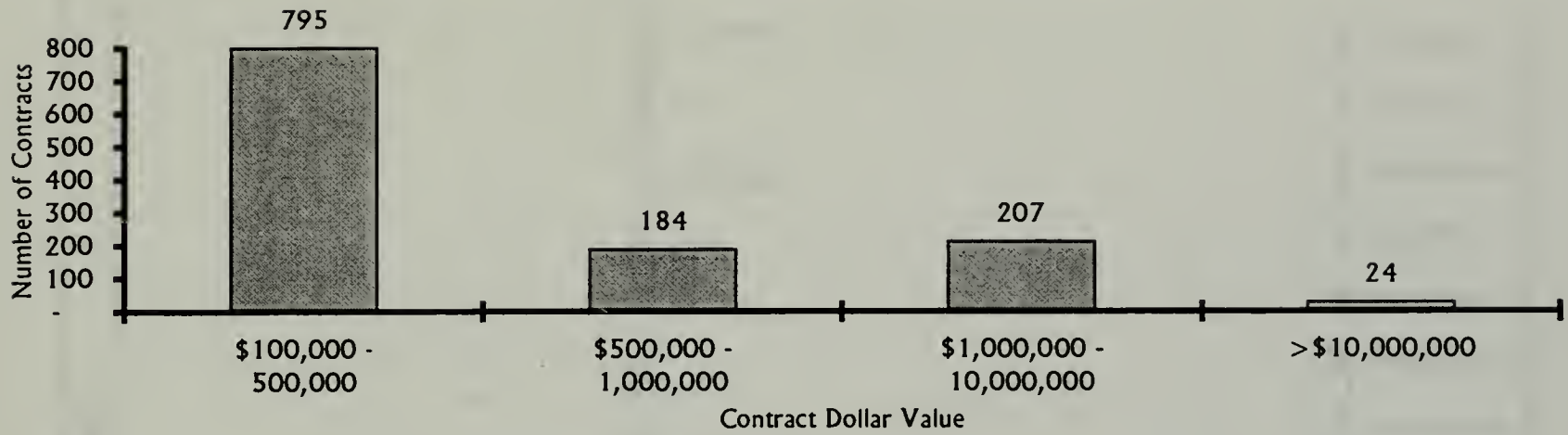
Notes

Direct\* spending refers to spending directly managed by the agency (agency holds contract with general contractor).

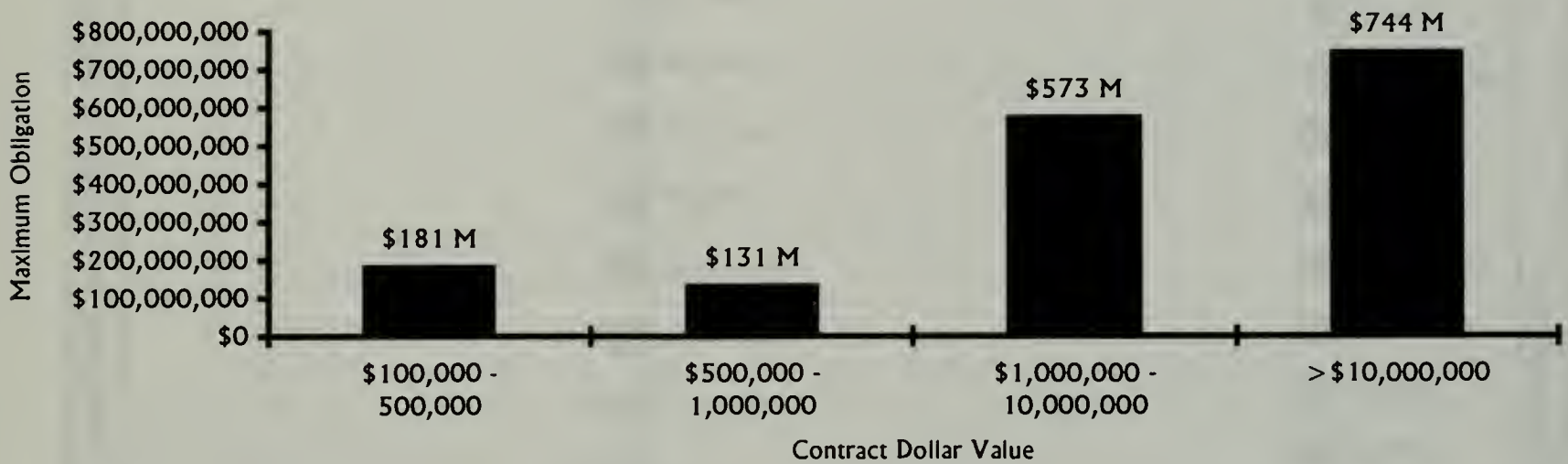
Indirect\*\* spending refers to spending indirectly managed by the agency (a local government holds contract with general contractor).



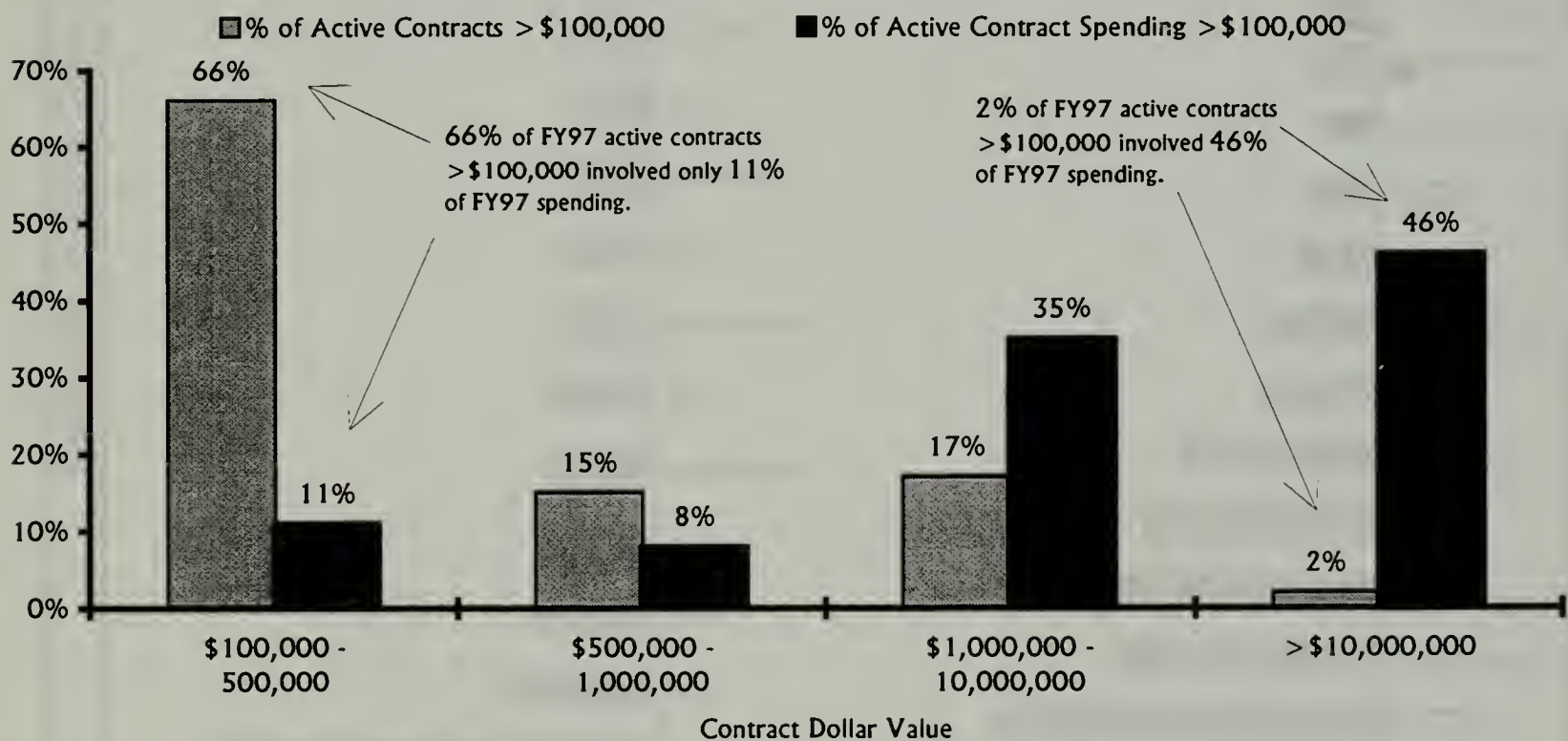
### Number of FY97 Commonwealth Construction Contracts



### FY97 Commonwealth Construction Contract Spending



### Percentage of Contracts vs. Percentage of Dollars Expended

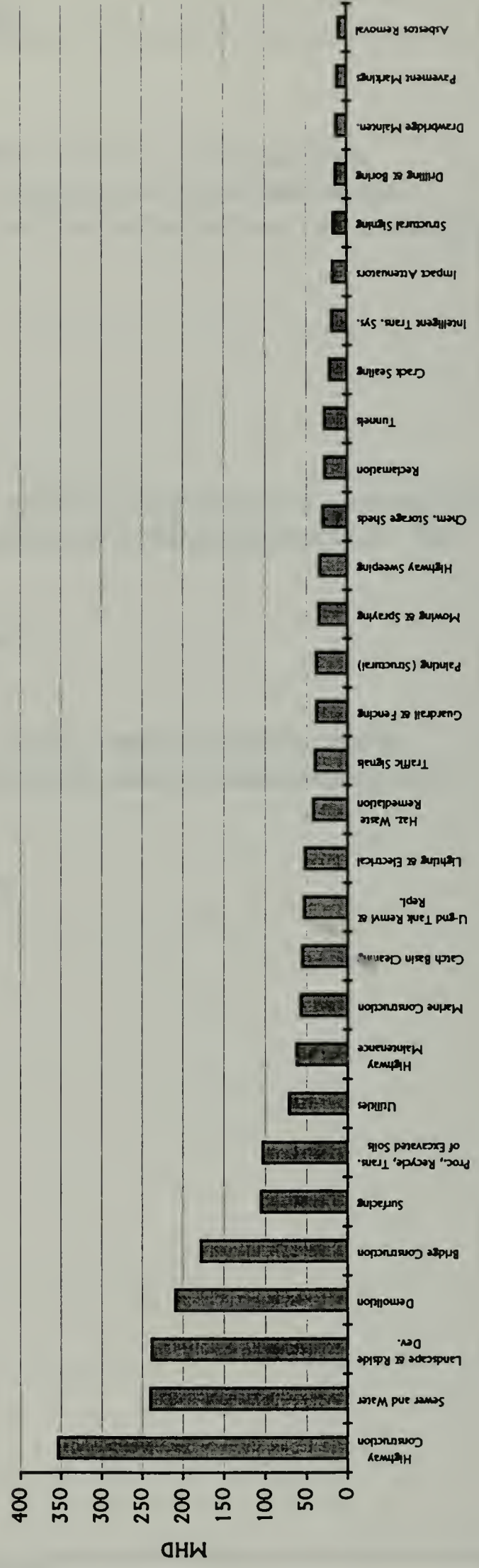
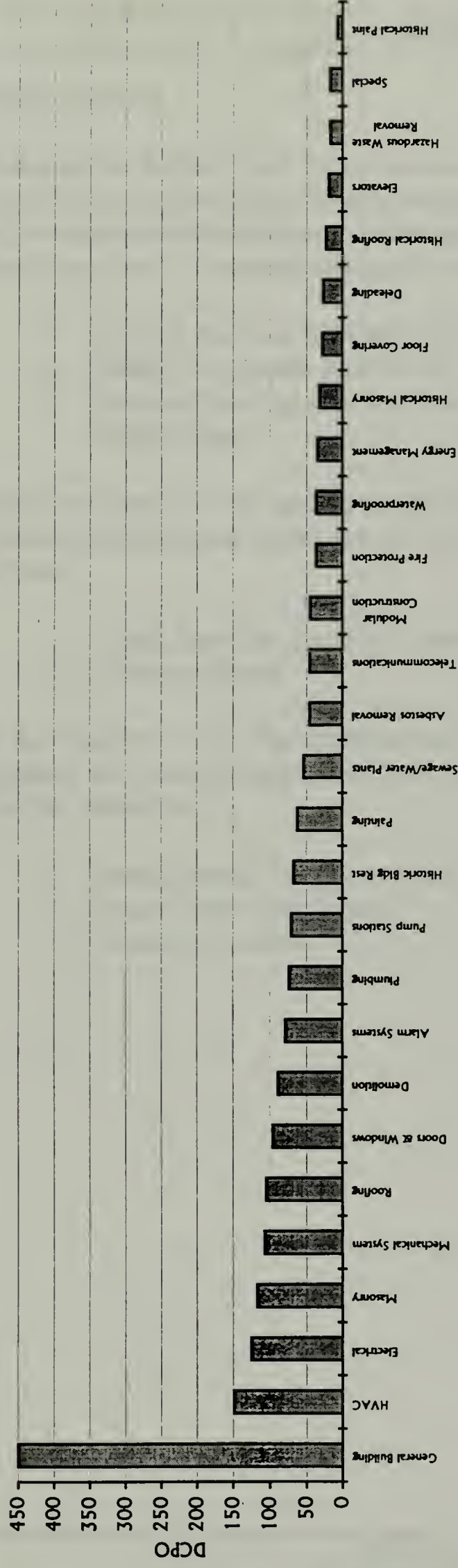


\* Figures include contracts for studies, design, resident engineer, and general construction. Contracts under \$100,000 in FY97 have been excluded.





# Distribution of Prime Contractors Prequalified by DCPO & MHD by Category



Secretary's Special Initiative to  
Reform Construction Procurement and Management by Commonwealth Agencies  
INTERIM REPORT



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## APPENDIX

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### What We Learned

The Construction Reform Task Force asked a variety of owners to describe their construction procurement and delivery methods, to discuss how those methods have evolved to address the institutional challenges that each organization faces, and to identify their best practices. The groups surveyed were:

- General Services Administration
- Fidelity Corporate Real Estate
- Harvard Planning and Real Estate
- Finch Group.

The task force also met with groups to obtain the customer perspective and a perspective from outside of state government on the Commonwealth's construction practices. The groups were:

- Client Agencies (vertical construction)
- Advisory Board.

Finally, the task force compiled information from existing reports issued by several organizations that have thought about how to achieve best value in Massachusetts public construction, including:

- Massachusetts Taxpayers Foundation
- House Post-Audit Report
- Inspector General.





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## WHAT WE LEARNED FROM: General Services Administration

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**Spending:** \$35 million annually on construction in New England

### Institutional Issues

- Congress does not furnish the rules for construction procurement and delivery; Congress provides the money.
- Construction procurement and delivery are governed by the Federal Acquisition Regulations, which were revised several years ago to allow more flexible methods.
- GSA now employs various procurement and delivery methods. They select the best methods on a project by project basis.
- GSA's procurement focuses on quality and price.
- GSA's procurement has to meet certain social goals.

### Procurement Methods

- GSA uses a **two step process**:
  - Step 1: Project-specific qualitative review of architects and general contractors to determine a qualified "short list"
  - Step 2: Selection made from "short list" is driven by qualifications ("original" two step) or lowest price ("modified" two step).
- GSA prefers the "modified" two step process to the original two step because it saves time to do a price-based selection instead of a quality-based selection for the second step.

### Construction Methods

- Select delivery system based on project size, complexity; have used:
  - Design/build
  - Construction manager at-risk
  - and others.
- Utilize Project Development Team
  - Comprised of user agency, construction manager, architect, and GSA representatives
  - Charged with ensuring quality and bringing the project in on-time and within budget.



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## WHAT WE LEARNED FROM: General Services Administration, continued

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### Implications

- Flexibility in procurement and delivery methods has allowed substantial time and money savings.
- Flexibility evolved to gain efficiencies as the industry changed.

### Recommendations

- The Commonwealth should implement a **two step procurement** process
  - Conduct a project-specific qualitative review of architects and construction managers to determine “short list”
  - Select from one “short list” based on price.
- The Commonwealth should seek **flexibility** in its project delivery methods:
  - Utilize an assortment of delivery systems to determine which best meets the needs of the project
  - Create a system that works within the present that is designed to evolve with the changes in industry.





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## **WHAT WE LEARNED FROM: Fidelity Corporate Real Estate**

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**Spending:** \$200 million annually on construction (includes new construction and renovations to accommodate rapidly expanding corporate divisions throughout the U.S.)

### **Institutional Issues**

- Time is money: delays are unacceptable due to domino effects they can have throughout the business
- Quality and competitive price are also priorities
- Customers are demanding (primarily due to a need to meet extremely short deadlines and to a corporate intolerance for failures that cause down-time)
- Additional demands of high rate of employee growth coupled with high volume of projects
- Integrity of procurement process is important; Fidelity considers itself accountable to its investors in a similar way that government is accountable to taxpayers

### **Construction Methods (Procurement and Delivery)**

- Partnering: Fidelity has developed a method of partnering, whereby:
  - Architects, engineers and construction management firms are chosen to serve as partners for a multi-year, multi-project term
  - Partner firms are chosen through a competitive selection process
  - Fidelity assigns a partner firm for each specific project based on the scope of the project
  - The relationship with partner firms is built on trust and requires mutual “open book” financial disclosure between the construction manager and Fidelity
- Project management: Fidelity assigns a team to each project, which:
  - Brings construction management partner into a project at the same time as the architect is brought in
  - Includes finance person for larger projects
  - Directs preconstruction activities with the construction manager and architect including early budgeting, scheduling, pre-purchasing of materials and equipment, etc.
  - Manages compliance of the partner firms with Fidelity requirements for project documentation, bidding procedures, etc.
  - Ensures that furnishings and equipment is bought by procurement department





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## **WHAT WE LEARNED FROM: Fidelity Corporate Real Estate, continued**

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- Fidelity's process evolved to meet the goals of optimizing time, quality and price

### **Implications**

- Size & volume of construction spending leads to prestige and increases desirability to contractors, which makes multi-project partnering workable
- Process is a function of time, quality and price; it is not solely price-driven
- Developing the optimal combination of procurement and delivery methods takes time, including some trial and error

### **Recommendations:**

- The Commonwealth should develop processes that optimize time, quality, and price
- The Commonwealth should test alternative procurement and delivery methods before implementing new methods across-the-board
- The Commonwealth should view projects as an overall process; not on a contract-by-contract basis



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## WHAT WE LEARNED FROM: Harvard Planning and Real Estate

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**Spending:** \$150 million annually on construction (primarily renovation of existing structures)

### Institutional Issues

- Risk averse (concern with bad press)
- Decentralized schools:
  - Three largest schools do own construction, but must follow guidelines
  - Lack of communication between schools on experiences with design and construction firms
- Customers are demanding (primarily for quality, although price and time are important)
- Projects are sometimes:
  - Program driven
  - Funding driven
- Compliance standards:
  - Union labor force (self-imposed)
  - Boston/Cambridge residency
- Projects < \$50,000 can be delegated to schools
- Project “fee” of ½ % assessed up to \$1 million, ¼ % above \$1 million

### Construction Methods

- Partnering
  - By project, not permanent team
  - Use “guaranteed maximum price”, not successfully in all cases
- Design/build
  - Good tool for quick, technical, not political projects
- Design-bid-build (conventional)
  - Don’t take the lowest bid all the time

### New Directions

- Focus on design phase, including rigorous designer selection





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## **WHAT WE LEARNED FROM: Harvard, continued**

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- Sharing qualification information through a database of designers and general contractors
- Harvard is keeping its eye on a developing trend to privatize university real estate offices

### **Implications**

- Flexibility is available in procurement & delivery methods
- Price isn't the only driving factor in procurement
- Quality can be factored into selection, informally

### **Recommendations**

- The Commonwealth should seek flexibility in its procurement and delivery methods
- The Commonwealth should find ways to factor quality into its selection methods



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## WHAT WE LEARNED FROM: Finch Group

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**Spending:** \$125 million annually on construction (housing developments, hotels, office buildings, retail, etc.)

### **Institutional Issues**

- Investing “other people’s money” to develop real estate, so focus is on return on investment, saving time; want to do the “best job possible for the lowest price”
- Continual pressure to perform because the development experts are “only as good as their last deal”
- Own and operate much of portfolio, so long-term investment matters
- Project accountability rests with one person at Finch

### **Procurement Methods**

- Like to get a competitive price, with known quality, so usually send proposal informally to several designers and general contractors that they’ve worked with in the past or heard of from talking to folks about other projects
- Amount of solicitation depends on complexity of the project
- May solicit advice “on spec” from several designers to fully develop the proposal, while simultaneously getting advice from general contractors about constructability and from marketing focus groups about the plan
- Select a designer and general contractor from the informal short list, based on their interest in the project, time availability, etc. – don’t have to take lowest bid
- Negotiate fees and terms informally with selected designer and general contractor; employ “shared risk, shared reward” concept to keep initial costs down (see below); if negotiations fail, back-up plan is to bid out the work
- Subcontractors: general contractor selects, but Finch reviews to be sure they’re acceptable



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## WHAT WE LEARNED FROM: Finch Group, continued

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### Construction Methods

- Partnering Model:
  - build team with designer and general contractor
  - share budget information, including projected investor return
  - create financial incentives to work well on the project by setting fees with “shared risk, shared reward” concept
- Use design/build sometimes
- Project Administration: details are important, e.g. detailed design documents; track costs against schedule of values very carefully; planning for long lead time on supplies, finding flexible alternatives
- Close-out: completing last 10-20% of project is tough (team is looking for next job), even with holding back 20% of project payments

### Implications

- Flexibility in procurement methods: allows quality to be factored in, including previous work
- Flexibility in delivery methods: allows Finch to tailor the delivery method to the complexity of the project
- Partnering, including shared information, results in more accurate budget projections and fewer change orders
- Procurement short lists save time from reviewing all bids obtained in public ad

### Recommendations

- The Commonwealth should find a way for a procurement short list to work in the public context, ensuring fairness and access, but realizing some efficiency gains
- The Commonwealth should seek flexibility in its procurement and delivery methods
- The Commonwealth should find ways to develop trust in its relationships with designers and general contractors so that information can be shared





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## WHAT WE LEARNED FROM: Client Agencies (Vertical Construction)

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DCPO has the discretionary authority to **delegate** construction management to the agency that will ultimately use or occupy a facility for projects with a total cost below threshold limits, which are prescribed by law.

Agencies that do not undertake delegated construction management are **client agencies** to DCPO. DCPO manages client projects through construction and turns them over to the user agency upon completion. A group of DCPO **client agencies** met in January to provide their perspectives on DCPO services and public construction practices in the Commonwealth.

Principal issues discussed by client agencies:

### Thresholds

- Increase the delegation threshold to \$500,000; some larger agencies with in-house expertise request a \$1 million limit (i.e. Higher Ed)
- Update Designer Selection Board thresholds (\$10,000/\$100,000) to correspond with proposed \$500,000 limit for delegation of project management

### Project Management

- DCPO performs best on high-profile, large scale projects and in emergencies; smaller jobs are not as well managed.
- The Commonwealth should provide a construction manual to assist client agencies and insure consistent management of delegated projects.
- DCPO should appoint one person as a contact to the client agency through the entire study, design and construction cycle.
- DCPO's resident engineer and project manager should be accountable to the client agency.
- Weekly meetings with DCPO for feedback work well.
- Client agencies want training to track the use of the funds on construction projects and to monitor the maintenance needs of existing facilities

### Quality

- The Commonwealth should factor quality and experience on other jobs into bid selection: "We don't want a zero-defect system that yields zero performance!"



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## WHAT WE LEARNED FROM: Client Agencies, continued

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- Evaluation of general contractors should be more stringent. Sub-contractors should also be evaluated.
- Evaluators must be protected from personal liability and the data should be used to inform future awarding agencies.
- Eliminate filed sub-bids. General contractors are compelled to use low bidding subcontractors and cannot develop team rapport with the subs of their choice under the current arrangement.
- Value engineering (between design and construction) should not be used to downgrade quality.
- “Or equal” clause is abused by the general contractor to substitute inferior materials.

### Time

- Modular construction and design/build are alternative delivery methods that work well and save time.
- Close-out takes too long. There should be a financial incentive for completion or another firm should be engaged to do finish work.
- Expand the use of “blanket” designer contracts

### Participating Agencies

Administrative Office of the Trial Court  
Executive Office of Health and Human Services  
    Department of Mental Health  
    Department of Mental Retardation  
    Department of Public Health  
Executive Office of Public Safety  
    Department of Corrections  
    Department of State Police  
Supreme Judicial Court  
University of Massachusetts System





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## WHAT WE LEARNED FROM: Advisory Board

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The Advisory Board convened in January. Its role is to provide a perspective from outside state government on the Commonwealth's construction practices. The principal issues discussed by the Advisory Board were:

### **Performance Based Selection**

- Performance is undervalued in current bid award procedure
- Price should be considered as one among other factors in bid evaluation (for example, price should weigh 40%)
- Low-bid gives incentives to cut corners, squeeze subcontractors, take short-term view of asset value
- Current prequalification is ineffective due to low standards, legal challenges, and inadequate performance evaluation system
- Subjective prequalification should avoid "old boy networking" preferences

### **Delivery Methods**

- A menu of options for decision makers should be available
- Not all delivery methods are equally suited to different projects

### **Flexibility**

- Public construction statutes, Ward Commission reforms and the climate created by those reforms have the effect of over-regulation
- Over-abundant rules ingrain waste in the process rather than eradicate it
- Inflexible rules penalize and prevent common sense approach

### **Construction Management**

- Contractors expressed a desire to work with more experienced and knowledgeable counterparts in construction administration; oversight agencies underscored the importance of having knowledgeable staff to represent the owner's interests
- Some states, such as California and Connecticut, engage a construction manager to promote the states' interests in all stages of large projects

### **Prompt Payment**

- Subcontractor organizations emphasized the need for prompt payment
- General contractors and trade groups said the Commonwealth payment process was reliable and timely, but does not rectify clerical errors efficiently, particularly during project start-up phase



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## WHAT WE LEARNED FROM: Massachusetts Taxpayers Foundation

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In November 1995, the Massachusetts Taxpayers Foundation published a white paper about public sector construction projects in Massachusetts entitled, “A Taxpayer’s Look at a Sacred Cow: Public Sector Design in Massachusetts Two Decades After the Ward Commission”. In a follow up meeting with Task Force members, they reiterated their earlier recommendations and made a few new ones.

### Findings

- Good performance has no impact on selection for subsequent jobs
- Awarding to the low-bidder does not allow for quality based consideration
- Awarding to the low-bidder also gives bidders an incentive to make low estimates up front with excessive change orders after the contract is awarded and the project is underway
- The requirement for DCPO to have two separate architects perform the study and the design adds too much time to the construction cycle
- Filed sub-bids diminish the prime contractor’s responsibility and undercuts quality of work
- Rules and processes established for the design and construction of public buildings are too burdensome and do not provide enough flexibility. Project management can be duplicative.
- Public officials are overly hesitant to evaluate poor performance accurately because they can be found personally liable for giving poor evaluations when contractors challenge their review in court
- Quality of components and parts is undermined by rules prohibiting proprietary specification

### Recommendations

- The Commonwealth should select projects from a **prequalified short list** to save time. The short list qualification should incorporate previous performance and the final selection should not be based on lowest price.
- The requirement for two different firms to do the **study and design** for buildings should be eliminated.
- The Commonwealth should **revisit project management** practices:
  - Projects should be delegated to client agencies more often.
  - Project managers should be accountable for making decisions to save time.





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## WHAT WE LEARNED FROM: House Post-Audit and Oversight Bureau

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In October 1997, the House Post-Audit and Oversight Bureau issued a report on the Taunton State Hospital. The Bureau conducted a review of the construction renovation process that involved the Division of Capital Planning and Operations, Department of Mental Health, and Taunton State Hospital.

The Bureau found that some public construction projects suffer from “cost overruns, use of inappropriate materials, and extensive, unnecessary delays.” They concluded that “the existing statutory scheme appears to generate results contrary to what was intended.”

The Bureau made several recommendations:

- Allow awarding authorities to make selections of contractors with the **best performance** ratings, rather than mandating selection of low-bidders.
- Improve the **contractor evaluation** system. The current procedures do not effectively identify contractor deficiencies and do not protect public officials from
- Eliminate the **two-step study/design** requirement to use different firms. The current process causes delays and fosters communication gaps. Safeguards can be put in place.
- Install **tighter controls** on the substitution of materials.
- Ensure a proper level of **communication** between DCPO, the user agency and the contractors.





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## WHAT WE LEARNED FROM: Inspector General

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Some members of the task force met with the Inspector General to discuss his office's proposals for construction reform. Below is a summary of the Inspector General's recommendations:

- Authorize use of **alternative construction delivery methods** as long as certain safeguards are met.
- **Remove unreliable contractors** by:
  - Improving the contractor prequalification system
  - Improving the contractor debarment process
  - Granting public officials qualified immunity for providing unfavorable evaluations on public projects
  - Allowing public officials reasonable discretion to reject bidders on past poor performance.
- Allow agencies to **focus resources** on larger and more complex procurements by increasing the threshold for projects subject to Ch. 149 to \$100,000.
- **Strengthen project oversight** by setting aside a small percentage of project funds to create a pool to fund debarment or other proceedings. Establish professional training standards for construction project managers in the Commonwealth.
- Finally, the Inspector General's office supports allowing the **same design firm** to do the feasibility study and design on a building project. The Inspector General's office believes that an effective system of checks and balances to prevent wasteful overdesign can be achieved through a value engineering review.



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## APPENDIX

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### **Agencies Represented on the Construction Reform Task Force:**

Administrative Law Appeals (DALA)  
Department Environment Protection (DEP)  
Department of Environmental Management (DEM)  
Department of Housing and Community Development (DHCD)  
Division of Capital Planning & Operations (DCPO)  
Executive Office of Administration and Finance (ANF)  
Executive Office of Transportation & Construction (EOTC)  
Fiscal Affairs Division (FAD)  
Information Technology Division (ITD)  
Mass Highways Department (MHD)  
Metropolitan District Commission (MDC)  
Office of Dispute Resolution (ODR)  
Office of the Attorney General (AGO)  
Office of the Inspector General (IGO)  
Office of the State Comptroller (OSC/CTR)  
Operational Services Division (OSD)







